

Research interests

Higher category theory, two-dimensional monad theory, type theory.

Education

- 2015–2018 **Bc. in mathematics**, *Masaryk University*, Brno
Bachelor thesis "Homogeneous C*-algebras" (in Czech, supervisor Mgr. David Kruml, Ph.D., Faculty of Science, MU)
- 2018–2020 **Mgr. in mathematics**, *Masaryk University*, Brno
Master thesis "2-categories" (in English, supervisor doc. John Bourke, Ph.D., Faculty of Science, MU), graduated with honors
- 2020–2025 **Ph.D. in mathematics**, *Masaryk University*, Brno
Dissertation "Lax structures in 2-category theory" (in English, supervisor doc. John Bourke, Ph.D., Faculty of Science, MU), passed summa cum laude

Talks

- 2022/02/02 **Category Theory Seminar**, *Johns Hopkins*, Baltimore, MD
Codescent objects and lax coherence
- 2023/07/06 **CT23**, Louvain-la-Neuve, Belgium
Factorization systems as double categories
- 2023/10/28 **Octoberfest 2023**
Quasi-limits and lax flexibility
- 2024/03/19 **PTSPC**, Tallinn, Estonia
Turning lax monoidal categories into strict ones
- 2024/06/27 **CT24**, Santiago de Compostela, Spain
Lax adjunctions and lax-idempotent pseudomonads
- 2024/10/21 **Second Virtual Workshop on Double Categories**
Double categories versus factorization systems
- 2024/11/15 **PSSL 109**, Leiden, Netherlands
Some characterizations of lax idempotency for pseudomonads

Publications and preprints

- [1] Factorization systems and double categories. *Theory and Applications of Categories*, 41(18):551–592, 2024.
- [2] Colax adjunctions and lax-idempotent pseudomonads. *Theory and Applications of Categories*, 44(7):227–271, 2025.

Teaching experience

- Autumn 2020–2023 **Discrete mathematics**, *Masaryk - Faculty of informatics*
Spring 2021–2022 **Linear models**, *Masaryk - Faculty of informatics*
Spring 2023 **Linear algebra and discrete mathematics**, *Masaryk - Faculty of informatics*

Workshops and academical stays

- 2022/07/11 - **Research School**, Leeds, UK
2022/07/15 Bicategories, Categorification and Quantum Theory (BCQT2022)
2022/01/24 - **Academical stay**, *Johns Hopkins*, Baltimore, MD
2022/02/28

Other academic activities

- 2021–2024 **Bachelor's theses reviews**, *Masaryk University*
2022 **A review activity**, *Journal of pure and applied algebra*